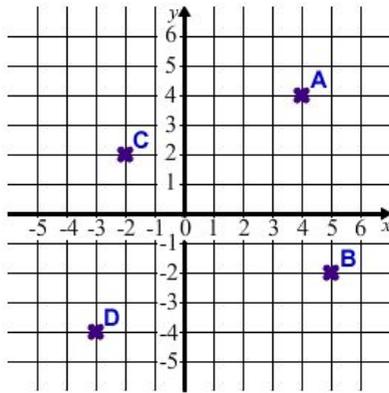


# Year 7 - Algebra

# Definitions / Key terms

## Coordinates HM:199

When we plot coordinates we go along the x axis first and then up/down the y axis (x,y)



Remember to read the x coordinate and then the y coordinate

- A(4,4)
- B(5,-2)
- C(-2,2)
- D(-4,-3)

## Simplifying HM:156-157, 160-161

**Collect like terms** Expand & Simplify...

$$4a + 5 + 2a - 3 = 6a + 2$$

$$5(x+3) + 6(x-4) = 5x + 15 + 6x - 24 = 11x - 9$$

## Substitution HM:155, 189

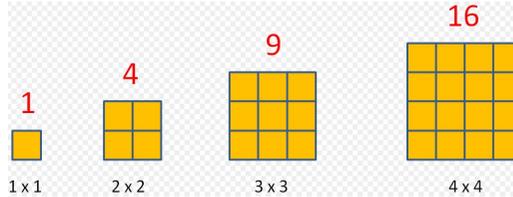
Substitute into	a = 2	Answer
5a	5 x 2	10
a - 5	2 - 5	-3
16 - a	16 - 2	14
7a + 3	7 x 2 + 3	17

Substitute into	y = 3	Answer
6y - 13	6 x 3 - 13	18 - 13 = 5
y <sup>2</sup>	3 <sup>2</sup>	3 x 3 = 9
27 - 5y	27 - 5 x 3	27 - 15 = 12
½y - 1.5	½ x 3 - 1.5	1.5 - 1.5 = 0

BIDMAS means you do the multiplication before the subtraction.

## Sequences HM:99, 196-198, 263

### Square numbers



### Fibonacci Sequence

The Fibonacci Sequence is the series of numbers:

0, 1, 1, 2, 3, 5, 8, 13, 21, 34, ...

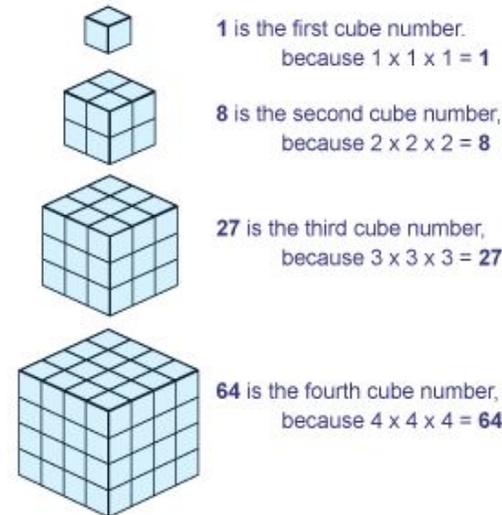
The next number is found by adding up the two numbers before it.

The 2 is found by adding the two numbers before it (1+1)

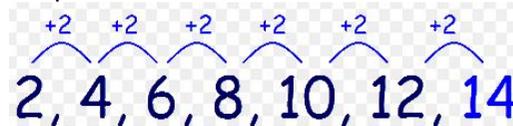
Similarly, the 3 is found by adding the two numbers before it (1+2),

And the 5 is (2+3), and so on!

### Cube numbers



### Sequence of add 2



Coordinate	A set of values that show an exact position. On a graph this would be (x,y)	(2,3) Going along to 2 on the x axis, and up to 3 on the y axis
Quadrant	Any of the four regions formed on a grid by the x-axis and y-axis	See image on left (coordinates)
Expression	A mathematical statement written in algebraic form. Does not include an = sign	$2a + 2a^2 - a$
Substitution	The change of a term to a numerical value - swapping one thing for another	Find 2ac where a=3 and c=4 $2 \times 3 \times 4$
Simplify	Collecting both positive and negative terms that are the same within an expression	$3b + b + 2a - a$ is the same as $4b + a$
Expand	Where an expression contains brackets, expanding multiplies out the values outside and inside of the brackets	$3(2y + 4)$ Expands to $3 \times 2y + 3 \times 4$ $6y + 12$
Term	In maths a term is either a number or variable (a symbol for a number we don't know yet) or numbers and variables multiplied together and are separated by an operation such as +, -, x or ÷	$3a + 2a - 4b$ Each colour term is the same, the sign attaches to the term
Equation	An equation is made up of two expressions that are equal (so includes an =)	$4x = 12$ This shows 4 multiplied by x is the same as 12
Solve	Finding the value of an unknown/variable	$4 + s = 17$ $s = 17 - 4$ $s = 13$
Sequence	A list of numbers or objects which follow a particular pattern or rule	2, 5, 8, 11 The pattern is going up in threes